

REMARKS

The Official Action of 1 July 2008 has been carefully considered and reconsideration of the application as amended is respectfully requested.

Claim 13 has been amended with the incorporation of the subject matter formerly in claim 14 (now canceled). The claims which depended from canceled claim 14 have also been canceled. All claims now of record require that the water-depleted product fraction obtained from the rectification zone that is cooled and recycled to the reaction zone contains primarily bisphenol A and phenol, with the water content being controlled at a level not greater than 2% by weight.

The claims stand rejected under 35 USC 103(a) as allegedly being unpatentable over Okamoto et al in view of JP 54-019951. Applicants respectfully traverse this rejection.

The claimed invention is based at least in part upon Applicants' discovery that, if a rectification zone with excellent water removing capacity is used to obtain a water depleted fraction primarily containing phenol and bisphenol A, **and having a water content controlled at a level of not greater than 2% by weight**, and the water depleted fraction is cooled and recycled into the reaction zone, the feedstocks of phenol and acetone can be converted into bisphenol A to the greatest possible extent while the negative effects caused by the presence of large amounts of water in the reaction zone are diminished. As next discussed, the cited references do not teach, and in fact teach

away from, the invention as now claimed.

Okamoto et al describe a method for preparing bisphenol A comprising reacting acetone and phenol in the presence of a catalyst wherein the reaction of acetone and phenol is performed while removing a part of the water generated during the reaction from the mixed solution containing acetone and phenol by a pervaporation method. The bisphenol A produced can be recovered by a known method such as removal of phenol by crystallization. The two Japanese documents cited in the “Background” section of Okamoto (JP36-23334 and JP 54-19951) describe that unreacted materials such as acetone and phenol **as well as water** can be recycled to the reaction system to thus increase the concentration of bisphenol A in the reaction product. Neither of these Japanese document shows or suggests the claimed step of recovering phenol and bisphenol A from a **rectification zone** and recycling to a reaction zone with little or no water. To the contrary, as acknowledged by the Examiner, JP 36-23334 and JP 54-19951 teach the recycling of water and other fractions back into the reaction system. See Okamoto at col. 2, lines 55-60; and col. 2, line 67 to col. 3, line 10.

Similarly, Okamoto does not teach recovering phenol and bisphenol A from a rectification zone and recycling, with little or no water, to a reaction zone. To the contrary, Okamoto teaches a pervaporation method for removing the water generated during the reaction from inorganic porous membranes, organic polymer membranes and/or inorganic-organic composite membranes (Okamoto at the bridge paragraph of columns 3-4). Thus, Okamoto’s capacity for removing water is limited. This is discussed in the specification of the present application in the paragraph bridging pages

3-4, which indicates this drawback.

In short, none of the cited references shows or suggests obtaining a water depleted fraction containing primarily phenol and bisphenol A from a rectification zone and recycling to a reaction zone, wherein the amount of water is controlled within a specific water content as claimed to facilitate a reaction between phenol and acetone. Indeed, as discussed above, the secondary references do not show or suggest any such control of water in the fractions recycled therein. Moreover, insofar as the primary reference uses a pervaporation method for removal of water whose capacity for water removal is limited, there could be no reasonable expectation of success that a combination of the references, even if proper, could result in the claimed control of water content to not greater than 2 wt % in a recycled water-depleted fraction. Finally, insofar as the described pervaporation method is critical to the Okamoto process (see, e.g., claim 1), any proposed modification of the Okamoto method to arrive at the claimed invention comprising rectification would be impermissible. See MPEP 2143.01(VI) (“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.”).

In view of the above, Applicants respectfully submit that all rejections and objections of record have been overcome and that the application is now in allowable

form. An early notice of allowance is earnestly solicited and is believed to be fully warranted.

Respectfully submitted,

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